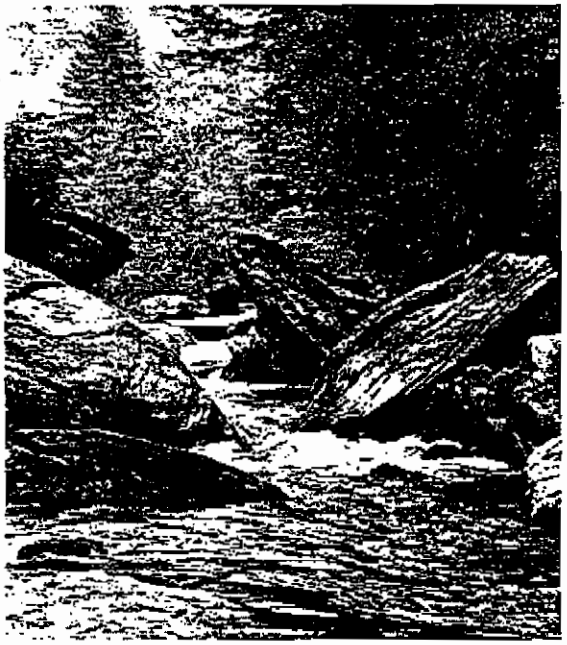


Section II, Wild Class, above Bull Pen Bridge in North Carolina.

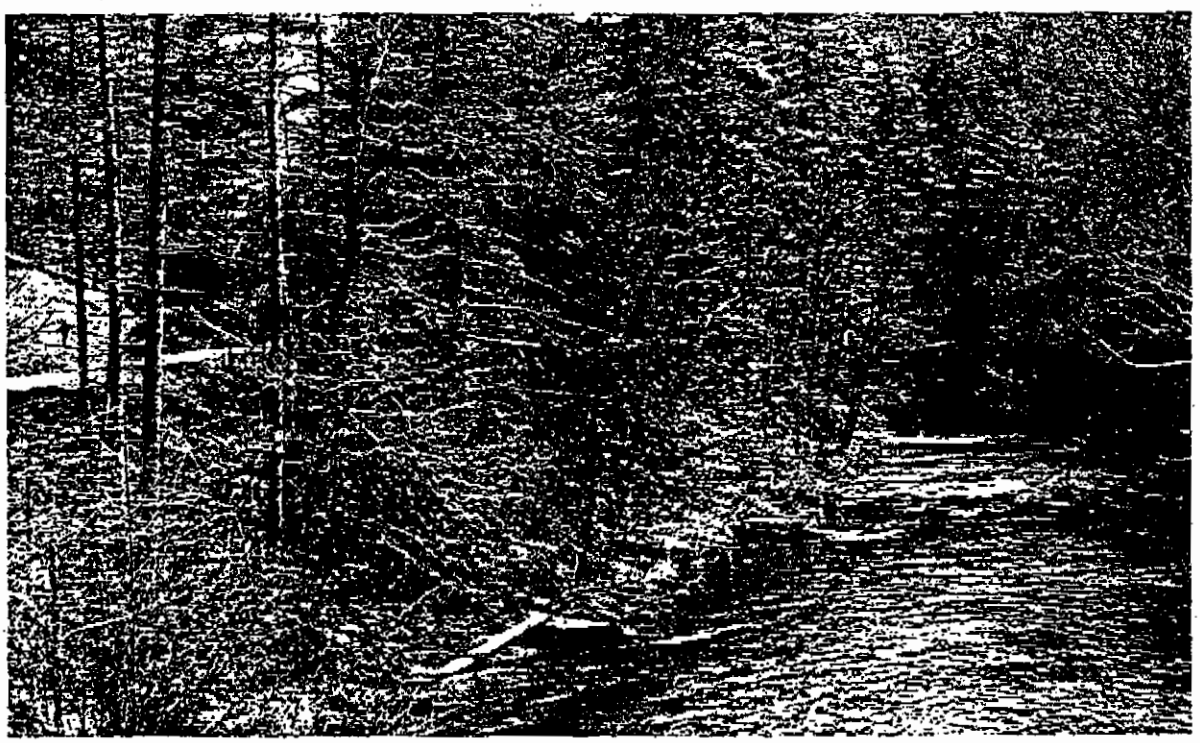
Wildflowers are abundant along all sections of the river.

The calm waters of Section III, Recreation Class, attract many canoeists.

A winter hiker along Section IV, Wild Class.

An area of concentrated recreation use is near U.S. 76 bridge in Section V, Scenic Class.

Section VIII, with paralleling road, offers good access to the West Fork.



Stekoa and Keowee once crossed the river near here. Warwoman Creek joins the river at this point, increasing the volume of water significantly. Below this point the degree of canoeing difficulty increases. The next 12 miles to Bull Sluice has been called the most beautiful stretch of whitewater in the Southeast--unexcelled for both scenery and canoeing water.

Leaving Earls Ford, steep ridges close in on the river as it drops over rapids, around boulders and down ledges. Six easy rapids in the next mile lead to the Rock Garden, where several rock slabs jut from the river and shoreline at a 45° angle, creating unusual rock formations.

The river continues over several difficult rapids and a stretch of turbulent water to Dicks Creek. Here Dicks Creek Falls cascades 50 feet down into the river. This is probably the most beautiful waterfall along the entire river. Travelers in canoes and rafts must portage around a 10 foot high falls in the main stream directly at the base of Dicks Creek Falls.

Below Dicks Creek, the river flows past a series of round-topped rocks and by two large islands to Sandy Ford. It then falls over some easy rapids and enters the Narrows. This is a long and difficult rapids where the stream narrows to a six foot width, pouring over several ledges in quick succession. Two hundred yards farther along, a steep ledge must be portaged. After a turbulent flume and several moderate rapids, the river enters a fairly calm one mile stretch.

For the next three miles to Bull Sluice, the river moves steadily over moderate shoals and rapids with several abrupt chutes. Bull Sluice, 300 yards above the U. S. High 76 Bridge, is an impassable 10 foot high falls that must be portaged.

This rugged and remote section of the river is recommended for Wild River classification.

Section V - Scenic River Class

This section is 1.0 mile of the river from just below Bull Sluice to 3/4 mile below U. S. Highway 76 Bridge. The remains of an old bridge, some evidence of sandmining, and a dirt access road to the water are located immediately adjacent to the highway bridge. Because of easy access this area attracts many visitors, especially fishermen, and is recommended for Scenic classification.

Section VI - Wild River Class

This section covers the remaining 7.1 miles to Tugaloo Reservoir. Downstream from U. S. 76 Bridge, the river flows through undisturbed country with deeply forested ridges rising easily on either side. The river is over 200 feet wide here and flows smoothly with considerable volume around a succession of rocks and boulders protruding from the water and banks. Within the first mile, the river drops over nine steep rapids.

For the next mile to Woodall Shoals, the river has only two difficult rapids. At Woodall Shoals, the Chattooga twists sharply to the right around gigantic shoals and drops over an eight foot cascading falls and down twisting, turbulent rapids. The river narrows abruptly below Woodall Shoals and begins its final challenging run to Tugaloo Reservoir. This is the most difficult stretch of boiling whitewater on the Chattooga River, crashing between narrow canyon walls over a succession of steeply dropping ledges, rapids and shoals. In the first mile to Stekoa Creek, the river rushes over two dangerous cascades, a constant series of smaller, turbulent rapids, and through a narrow 1/2 mile long canyon enclosed by rock walls several hundred feet high.

No other stretch of the Chattooga can compare with the last 3.7 miles of the river with its 48 major rapids and cascades. It is rated by canoe experts as one of the most difficult stretches of whitewater in America, attempted only by the most expert or foolhardy canoeists and floaters. The river runs among huge boulders and through sheer rock-walled canyons. The wildness of the land and sheerness of the ridges and canyon walls make it nearly impossible to get out of the river once a floating party is launched. It flows through an impressive gorge with cliffs on the east side rising over 400 feet above the water level. Several tributaries enter by waterfalls, such as 60 foot high Long Creek Falls. Not far from the gorge the river is stilled in the quiet waters of Tugaloo Reservoir. This section is recommended for Wild River classification.

Section VII - Wild River Class

This section includes a portion of the West Fork of the Chattooga and reaches from 1.3 miles above Three Forks on Overflow Creek to 0.1 mile above Overflow Bridge a distance of 3.3 miles.

The West Fork above Overflow Bridge is wild and inaccessible. Because of the extremely rough terrain and lack of access, at least one-half day is necessary to view this segment. The use of floating equipment is impractical. Three creeks join at Three Forks, about two miles above Overflow Bridge, to form the West Fork.

Holcomb Creek, the westernmost of the three, is a small, narrow, fast-flowing mountain stream. About one-half mile above Three Forks, it drops over a small waterfall and crashes down a narrow gorge, creating continuous whitewater. Cliffs rise vertically over 100 feet above the water on one side. Evidence of the great force of the water is seen in the numerous rock formations and round swirl holes cut into solid rock with auger-like precision. This stream has the appearance of a darkly shaded cataract hidden by cool, dense vegetation.

Overflow Creek is the middle stream of the Three Forks. It is a larger, wider and more smoothly flowing stream than either of the other two. Overflow averages 20 feet in width and is a rather open, sunlit stream that could be easily walked by fishermen. The stream includes a beautiful 25 foot waterfall that is one of the most spectacular single features of the West Fork.

Big Creek is similar in size to Holcomb Creek and drops swiftly in a series of waterfalls and fast flowing pools. For 100 yards above Three Forks, it flows in washboard fashion over a series of ledges tilted at about 30 degrees. The steep rocky sides of the stream and the dense vegetation along its shoreline make it difficult to climb out of the stream bed.

Holcomb and Big Creeks join Overflow Creek almost directly opposite each other at Three Forks. At the junction a number of prominent large rocks jut into the river and cliffs rise almost vertically from the river. The two mile section from Three Forks to Overflow Bridge can barely be floated by rubber raft. Lack of accessibility makes floating this section impractical. The river runs from 30-60 feet in width and contains water of every description, from easy stretches to rapids and narrow turbulent shoals. This part of the West Fork and the three creeks forming it are excellent trout streams. The West Fork above Overflow Bridge, including the last one-half mile of Holcomb and Big Creeks and the lower 1.3 miles of Overflow Creek, is recommended for Wild River classification.

Section VIII -- Recreation River Class

This section covers a distance of 4.0 miles, reaching from 0.1 mile above Overflow Bridge to the junction with the Chattooga River.

The West Fork below Overflow Bridge changes abruptly into a different kind of river. Its character changes from whitewater in primitive surroundings to a slow-moving gentle stream--suitable for the canoeing novice--in an area of moderate development. Overflow and Warwoman Bridges, several fishing cabins, and evidence of logging to the water's edge occur in the first 2.6 mile segment. Overflow Road parallels the stream closely. From Warwoman Bridge to the Chattooga, the river banks show heavy use and considerable erosion. Noise from traffic on the roads creates a distracting influence. The river banks are high, almost vertical, and generally block the view of surrounding fields and farm buildings from the water level. Several abandoned developments are in the lower reaches, including rusty sandmining equipment, steel tanks, an old splash dam and the remains of a low-water bridge.

Highway 28 closely parallels the river much of the way between Warwoman Road and the Chattooga. The eroded riverbanks throughout this segment have contributed a number of sand and silt deposits along the stream course.

The lower four-mile section of the West Fork, from Overflow Bridge to the Chattooga is recommended for Recreation River classification.

X. ACTION PLANS

A. Land Acquisition and Easements

The area of the proposed National Wild and Scenic River includes a total of 15,432 acres of land. Of this total, National Forest ownership comprises 87.3%, or 13,471 acres. The remaining area involves 38 ownerships, totaling 1961 acres.

The private lands within the proposed corridor can be divided into four priority classes for acquisition, or scenic easements. These classes are based on public use and access needs, protective needs, river classes, and analysis of compatible and incompatible uses within the river corridor.

These land acquisition classes are:

FEE ACQUISITION NEEDED

1. Lands Needed to Correct Incompatible Uses

These are lands within the proposed river boundary which directly conflict with wild, scenic, or recreation river classification and definitely should be acquired by fee acquisition. The incompatible uses on these lands could not reasonably be expected to clear up without fee acquisition. This category includes 163 private acres in Georgia and South Carolina. These are lands with unsightly developments along Highway 28, and with incompatible hunter camps, access roads, jeep trails, etc. at Earls Ford. Any lands under this category should receive priority for acquisition. These lands make up only 8% of the total private lands within the river boundary.

2. Lands Needed for Development

These are not as critical as are those under the first category, but are lands needed for development, or to prevent and minimize future foreseeable problems. These are divided into two primary classes:

a. Lands needed for recreation development and access, or lands adjacent to main highway access points which might conceivably receive incompatible developments because of adjacent roads or other close developments. Included in this category are 360 acres in Georgia along Highway 28 and the West Fork and 10 acres around Grimshawes Bridge, in North Carolina.

b. Lands in Wild River class. All lands in the Wild River class should be acquired by the Forest Service because these are the most valuable within the river system and must be maintained in a primitive condition. The cost of scenic easements would be almost as much as fee acquisition for these lands. Included in this category are 214 acres in the two proposed Wild River sections.

SCENIC EASEMENTS ACCEPTABLE

3. Fee Acquisition Desirable, but Scenic and Use Easements Acceptable

These are lands where fee acquisition would be desirable, but if not available for purchase, scenic and use easements could be used to meet management objectives. This would include most of the lands in Scenic and Recreation River classes except problem areas, main highway access points, needed development lands and significant outstanding features. Included in this category are 1,179 acres. This category includes 60% of the private lands within the river boundary. The majority of private landowners may retain title to their lands and continue present compatible uses if they so desire. Protection and public use of the river can be accomplished through scenic and use easements.

4. Scenic and Use Easements Desirable

These are lands definitely needed under scenic and use easement. They are lands on which private landowners can help achieve desired management objectives for the river by maintaining needed pastoral scenes, meadows, vistas or farms which compliment the scene along the river. This category includes 35 acres of private lands above Grimshawes Bridge in North Carolina and a two acre church site in Georgia.

The proposed river corridor width is based on establishing a protective boundary at the top of the main ridges on either side of the river. It does not coincide with property ownership lines. Thus, in most cases the boundary splits most private ownerships along the river. Many individual private landowners will be reluctant to sell only a part of their property along the river and may well prefer to sell all of their tracts or none. When landowners so desire, and it is in the interest of

the Forest Service, the remaining portions of these tracts should be purchased under other National Forest acquisition authorities.

Zoning would not be desirable in providing complete protection for the lands within the proposed corridor. At present, there is no zoning anywhere along the Chattooga River. South Carolina has given its counties zoning authority subject to legislative approval, but in Georgia and North Carolina the counties have no zoning authority. Zoning as a protective vehicle has been weak historically, and zoning action is continually subject to rehearing and possible changes. Fee acquisition or scenic easements are much preferred as the means to protect the river.

B. Administration - Management

Most lands within the proposed corridor are administered by the U. S. Forest Service. This agency, because of its existing organizational facilities, including manpower and equipment located near the river, and its knowledge acquired through conducting the study, is well suited to continue management of the Chattooga as a wild and scenic river. It is recommended that the U. S. Department of Agriculture, Forest Service administer the Chattooga River if designated a unit of the National Wild and Scenic River System.

A detailed river management plan will be developed. This plan will recognize all of the resource and aesthetic values of the Chattooga River environment. Emphasis will be on protecting and preserving these values while allowing controlled use by present and future generations of Americans.

The Forest Service should continue to work closely with other federal and state agencies in wild river management. Of special need will be state assistance from the Game and Fish Commissions and water quality organizations.

Recreation

Restrictions in the Act limit types of recreation use, especially in the Wild and Scenic sections. Compatible uses on the Chattooga River are floating (including rafting, canoeing, and kayaking) hiking (including sightseeing, nature study, and photography), hunting, fishing, and primitive camping. These uses are provided for in the development plan.

Major management objectives on the Chattooga River will be to maintain the river in the condition that made it worthy of inclusion in the National Wild and Scenic Rivers System and to provide a safe and satisfying recreation experience consistent with this status, without damage to the resource. Major problems identified in reaching these objectives are the safety of recreation users, waste disposal, concentration of use and general overuse.

Safety problems associated with river travel and the related activities of hunting, fishing, photography and nature study, and camping in a remote area are primarily related to personal injuries. If an injury is sustained, getting help or getting to help is extremely difficult. This places the burden of safety on the individual. Physical conditioning and an awareness of the intrinsic dangers that exist are the best possible safety precautions. To minimize these dangers the Forest Service will caution users about them. It will inform these users about whom to contact in case of emergency, and how they may be reached. A voluntary check-in and check-out arrangement will be necessary as the use increases. Details will be presented in Safety and Search and Rescue Plans.

Waste disposal will be a major consideration, especially in the wild sections where the language of the Act refers to waters unpolluted. This includes both solid waste and human waste disposal. In an area as large as that within the proposed corridor, when people are introduced solid waste disposal becomes a problem.

Access points, primitive campsites and areas where spectacular water features are located will tend to concentrate people. The impact on these areas, if not controlled, will result in depletion of available firewood, water pollution, insensitive disposal of garbage and waste, and a general deterioration of the environment. Recreation use will be regulated on the basis of carrying capacity of the land and water rather than on demand.

At the present time, the Chattooga River is not overused. Saturation levels based on "the experience" have been determined. Close observation and records of recreation use within the river will be maintained. This information will be correlated with the benchmarks discussed in Section X-C of this report. When recreation use on any section of the river approaches the saturation point, as determined through evaluating the experience, or deterioration of the environment begins to show as checked against the benchmarks, saturation levels will be revised and regulation of use will be enforced within the saturation level. Rationale for determining saturation level can be found in Appendix F.

State agencies will cooperate in certain phases of administration of the river. In each State, the Game and Fish regulations of that State will be enforced by employees of the State Game and Fish Commission. Water quality and pollution abatement provisions will be enforced by State officials.

Yearly cost estimates for administration, operation and maintenance for the first five years of operation are shown in Appendix G.

Timber

Though the production of timber products will be restricted within the proposed corridor, timber management in its broad sense will be practiced. Beautiful timber stands are becoming more and more important in the overall outdoor recreation picture.

The perpetuation of these timber stands cannot be left to chance but must be produced through proper management, which includes protection from wildfire and insect and disease attacks.

The role and objective of timber management will be the protection and production of healthy vigorous stands of trees of all ages and species common to the area, managed and utilized only to enhance recreation and other resources. The objective will be the same on all segments regardless of whether classified as Wild, Scenic or Recreation.

Timber will be managed for recreation, watershed protection, aesthetic and wildlife values, rather than for commercial production. Some cutting may be designed for scenic improvement or specific wildlife habitat improvement.

Wildlife - Fisheries

In general, wildlife habitat management activities on a large scale will not be attempted. The narrow corridor limits habitat management opportunity.

State Game and Fish organizations have made recommendations for the Chattooga as a "Wild River" fishery.

North Carolina Game and Fish Commission

1. Only single hook lures or baits allowed.
2. No minimum size limit on any species of trout.

3. Seven fish creel limit.

4. Regular fishing season from the first Saturday in April through Labor Day.

5. Special season for trophy fish, from Labor Day through October 31, in which creel limit for brown and rainbow trout is reduced to one fish per day with a minimum size of 16 inches, or one brook trout per day with a minimum size of 12 inches. During this extended season no bait or lures shall be used other than an artificial lure having one single hook.

6. Stocking will be carried out with yearling or fingerling trout as needed and in proportion to the availability of such fish in relation to our other public waters.

Georgia Game and Fish Commission

1. No restriction on lures.

2. No size limit.

3. Eight fish creel limit.

4. Year round season on the mainstream and the portion of the West Fork from Three Forks downstream.

5. Seasons on tributaries in the zone open from April 1 through October 15.

6. Fish stocking limited to use of subadults. No stocking in section proposed for "wild" status above Highway 28 Bridge.

South Carolina Wildlife Resources Department

1. No restriction on lures.

2. No size limit.

3. Ten fish creel limit.

4. Year round season on mainstream and tributaries.

5. Provide stocking access at one point below Highway 28. Continue to utilize the existing access points now available along Highway 28 and at Burrells Ford.

6. Stock all sizes of fish.

Regulations between States should be as near alike as is possible. The following proposal applying to all three States would be desirable for management of the Chattooga as a "Wild River" fishery.

1. Only artifical lures (single or treble hook) allowed in the sections above the Burrells Ford Bridge on the mainstream and above Overflow Bridge on the West Fork. Live bait and artificial lures allowed below these bridges.

2. No size limit on trout.

3. Seven fish creel limit on trout.

4. Year round season on mainstreams and tributaries.

5. Stocking of subadults or fingerlings only (no catchable-sized fish) allowed in wild and scenic zones.

6. Stocking of any size fish allowable in recreation zones.

7. Vehicular stocking access provided only into recreation zones. (If Burrells Ford Bridge and Bull Pen Bridge are left open to vehicular traffic, these could also be used as stocking points for subadult fish.)

8. No restriction on night fishing.

All States are in agreement that the Redeye bass fishery in the lower reaches should be protected and enhanced and that further stocking of smallmouth bass should be discontinued there.

Water

At the present time, management of the Chattooga River area produces high quality water above Stekoa Creek. The production of high quality water will continue under Wild and Scenic River management.

The only major problem needing attention is sewage discharge from the City of Clayton, Georgia, into Stekoa Creek which flows directly into the Chattooga River. The city is aware of this problem and is correcting it.

Because of habitation on the tributaries of the Chattooga River in North Carolina and Georgia, additional pollution is possible. A sanitation survey is being made to locate possible sources of pollution and to determine the action needed to minimize their effect. State water quality agencies are interested in maintaining the quality of water in the river. No insurmountable problems are anticipated.

Minerals

The extraction of minerals through surface disturbance is not compatible with Wild and Scenic River status for the Chattooga River. The only mining activity existing within the proposed boundary is sand mining. Since other sources for sand already exist, this activity will be terminated and no future prospecting or mining involving surface disturbance will be permitted. Since natural action of the river will obliterate any evidence of the previous sand mining, no corrective action will be necessary. Prohibiting mining activity will have no adverse affect on local economy.

Land Uses

All existing land uses in the Chattooga corridor are discussed by river sections with emphasis on how they affect the recreation environment, modifications needed, methods to achieve such modifications, and resource and activity use foregone because of such modification.

Section I - Chattooga River mile 53.9 to 48.4

Section I on the upper headwaters of the river flows entirely through private lands. These lands are mostly owned for summer home and resort or estate purposes. Most landowners here would object to Forest Service acquisition of their lands within the proposed river boundary, but many will agree to scenic easements. Although acquisition is desirable for complete control, it is not extremely important from a watershed-protection standpoint. These upper watersheds are probably in a condition as good as any in the Savannah River Drainage. Waters here flow through estates and lands maintained primarily for "scenery". Little farming or logging is done; and soil disturbance, erosion and stream siltation is kept to a minimum. These lands will generally continue to be maintained in good watershed condition. Scenic and use easements can assure protection of the river and allow public use of it, while private landowners keep title to their lands and continue present uses within the boundary.

Some construction of summer homes, roads and driveways, and occasional small impoundments will occur on private lands within the watershed outside the proposed boundary. These are not expected to create erosion, pollution or diversion problems affecting the main river. The North Carolina Department of Water and Air Resources will enforce state stream quality standards to protect these tributaries and the main river.

Section I meets the criteria for Scenic River classification and except for the following uses and dvelopments, is in a forested state--

--a summer home within one-fourth mile of Silver Slipper Falls within the boundary. This summer home is completely out of sight from the river and is compatible with Scenic River classification. Scenic easements can be used here to control any future development which might be incompatible.

--two powerlines crossing the river above Grimshawes. These are single strand lines crossing at right angles and are hard to see. The rights-of-way are about 30 feet wide and can be seen only when directly adjacent to them. These detract little from the qualities of the river and are compatible with Scenic River classification. They do impose a brief reminder of modern civilization, and efforts should be made to have them located underground to further improve this section.

--approximately one-half mile of eroding riverbank along a section of old fields which are now growing up in young trees above Grimshawes. Natural reestablishment of forest cover along the banks should stabilize and control sloughing of the banks. Some special planting of native trees and grasses may be needed to hasten control of erosion.

--some past logging and evidence of old fields growing up into woods in scattered places along the extreme upper headwaters down to Chattooga Cliffs. These scattered spots detract only slightly from the overall primitive qualities of this first section of the river. All are growing naturally to forest. Scenic easements on these lands should allow this process to continue.

--remains of an old, fallen-down house and an old barn within one-third mile of the river between Silver Slipper and Ribbon Falls. These are out of sight from the river and have an interesting early American architecture completely compatible with Scenic River classification.

--a log summer home located below Timber Ridge just within the boundary. This structure is not visible from the river and is compatible with Scenic River classification. Scenic easement should limit further development here.

--paralleling pastures for one-fourth mile on the west side of the river one-half mile above Grimshawes Bridge. A two-story white frame farm house, two barns, a shed, a brick caretaker's residence, and a summer cabin are visible from the river. Four additional cabins and a garage-apartment are located

in this complex out of sight from the river. This pastoral scene, its uses, and an outstanding view of Whitesides Mountain are definitely compatible with Scenic River classification and a scenic easement is needed to preserve the scene. Some stipulations should be included to limit further development and possibly screen several homes with vegetation.

--Grimshawes Bridge is a wooden structure crossing the river through a wooded, closed landscape. It is the only access road crossing the first 5 1/2 mile section of river and is compatible with proposed Scenic River classification.

--a rustic, darkly painted log summer home on the west bank of the river just below Grimshawes Bridge. It is well sited, blends in well with screening vegetation and detracts little or none from this part of the river--particularly with Grimshawes Bridge crossing just above it. It is compatible with Scenic classification.

--scattered trails exist up and down this section. Many are fisherman trails used by local landowners and private hunting and fishing clubs. These trails are compatible with all river classes and additional ones are needed to provide hiking access. Most existing trails need substantial reinforcement and some relocation to withstand any appreciable visitor impact.

--Monroe House - an old rustic house on the east bank of the river two miles below Grimshawes Bridge. This interesting pioneer structure blends in well with the river and is compatible with Scenic River classification. Efforts should be made to acquire this historical structure so that it can be restored and maintained.

--old timber bridges - one just past Greens Creek, and one above Chattooga Cliffs providing access to Monroe House. Both are built of two log stringers covered with plank decking. The log bridge past Greens Creek is rotting and appears abandoned and unused. The bridge below Monroe House is located on a steep jeep road which is used infrequently by the owners of this land. These old bridges are compatible with Scenic River classification, but, if possible, should be removed to improve the quality of these sections.

Removal of abandoned log bridges, restoration of eroding banks, etc., will have no effect on resource and activity use of the private lands along this section of the river. Scenic easements are the only part of the protection-improvement needs for this section that will have an immediate and long range effect on present and future uses of these private lands. Scenic easements are needed to assure that the headwaters of the river continue in a relatively undeveloped condition and provide for public use of this portion of the river. The landowners along this section have no important existing uses which would be foreclosed by scenic easements; the few pastures, houses, and summer homes in this section are compatible with Scenic River classification. The majority of these landowners will agree with the provisions of scenic and use easements; some will agree and some will object to limitations on further development within the river boundary; and many can be expected to object to public uses of their lands within the boundary.

The protection provisions of scenic easements will agree with most private land management objectives along the river. Many of the landowners would be concerned about possible non-compatible development on adjacent private lands; the protection provisions of scenic easements for the boundary of the river will act as a form of "zoning", assuring these landowners that adjoining private lands will be maintained in a primitive condition compatible with their own lands. This should also help protect land values in this area.

Landowners may object to limitations on their own future development of their lands within the boundary. Although most would be in agreement with maintaining the river in a primitive condition, some will want to build additional cabins and summer homes or expand existing developments.

The provisions of use easements will probably receive the most opposition from the private landowners. Most of these landowners are summer home folk, some quite wealthy, who own these lands for their exclusive use as summer mountain retreats. Many have stocked this part of the river with trout at their personal expense and are quite proud of the excellent fishing they have produced. Most will naturally oppose the public "trespassing" on their lands, or fishing or floating the Chattooga across their lands. The few with homes, pastures or summer homes within the boundary of the river will certainly not tolerate recreation users encroaching on their private properties, trampling through their yards and invading their personal privacy. Several of these landowners have no intention of ever selling or giving up their lands, even for a much higher-than-average market value. They certainly would not look with favor on a forced condemnation program on

the Chattooga, even of scenic easements. Many of the landowners will cooperate with the Forest Service in working out a responsible program of protective scenic easements. The Forest Service must do everything possible to work out a system of public access for this portion of the river that will cause the least amount of disruption to these private landowners' uses and privacy.

The following factors should be considered in obtaining the right of public access through use easements for this section of the river--

--If this river is included in the National Wild and Scenic Rivers System, all portions of it should be open so all persons are free to enjoy it.

--As a minimum, the public should be able to fish, float, or hike along the river through these private lands.

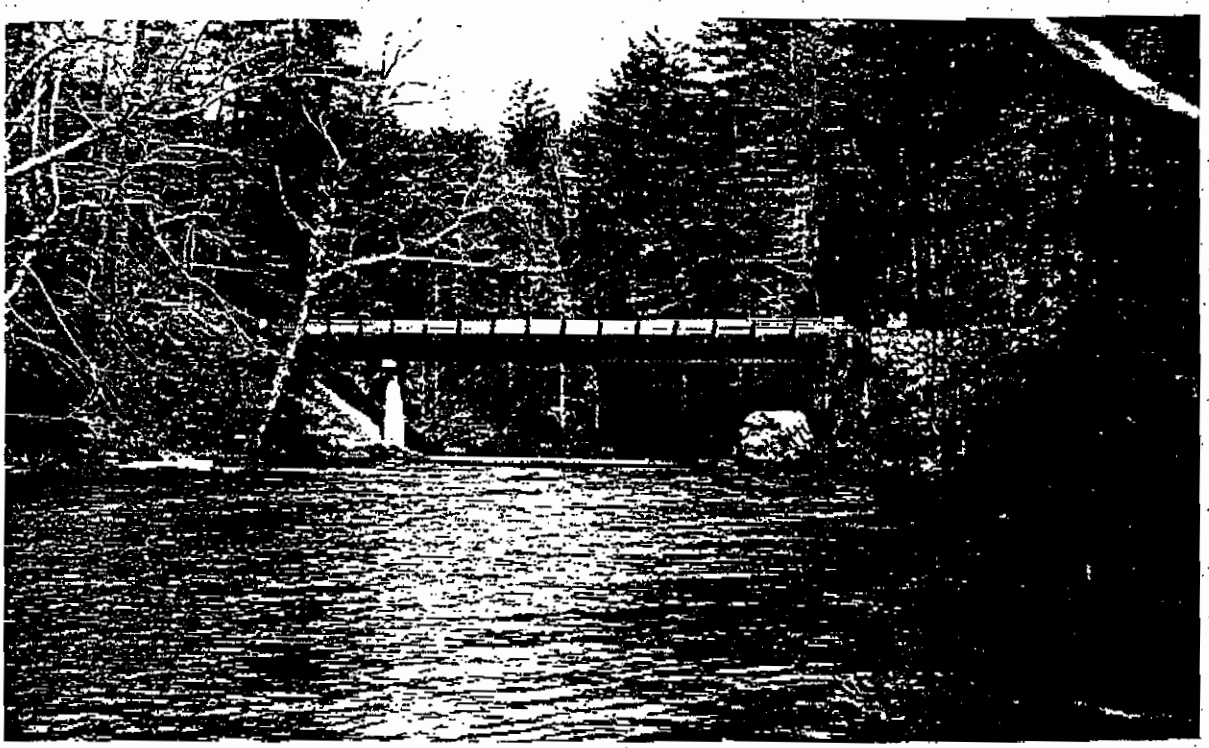
--In order to protect the privacy of private landowners along the developed portions of this section, the public should be restricted to the river or to developed trails across these lands. This should be strictly enforced by the Forest Service, and if necessary, some means of physical restraint should be used to correct any problem areas.

--Use easement rates must adequately recognize situations in which public access causes a loss of privacy to the private landowner, and provide for adequate compensation for the values of exclusive solitude and privacy which are lost.

--Immediate public use of these lands is not of first importance, and should not be insisted upon if it hinders the more important program of obtaining protective scenic easements to assure that the river is protected and maintained in a primitive condition. Use easements might allow for deferment of actual public use of these lands for a period up to 10 years, if necessary, to hel gain easements, cooperation and goodwill from the private landowners along the river.

--The public should be allowed access to the private lands within the river boundary only after an adequate reinforced system of trails is completed through these sections and only when the Forest Service can provide reasonable cleanup, policing, and administration of these lands.

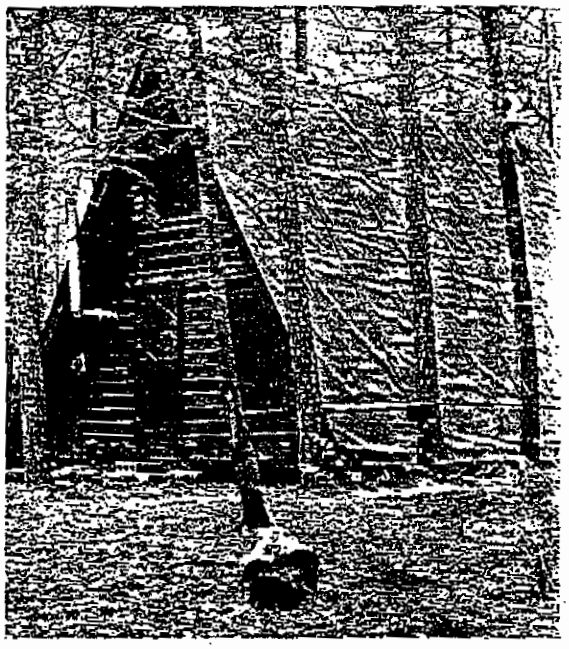
--Trails and other provisions for public use of the river should be located to minimize conflicts with the existing private uses



Burrells Ford Bridge.

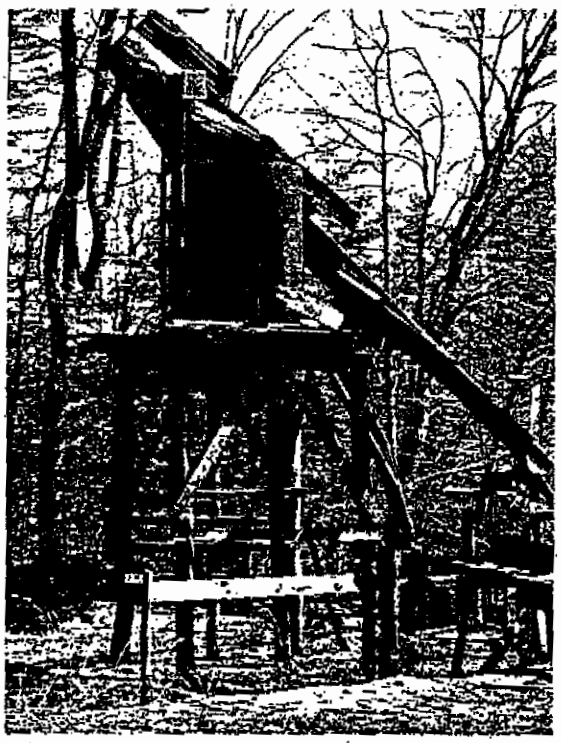
Bull Pen Bridge.

Russell Farm can be seen from the river near Highway 28 bridge.



A summer home on Georgia Power Company land along the West Fork.

Abandoned mining equipment on the West Fork.



House trailer along river in Section III.

Section II - Chattooga River mile 48.4 to 32.5

Section II of the river is in a near-natural state, with only two roads crossing in 15.9 miles. These are Bull Pen and Burrells Ford Roads, two dirt Forest Service roads which cross the river in a section proposed for Wild classification. The portions of the river above, between and below these two roads are so rough and inaccessible that they take one or two days to hike or raft. These roads cross through dense woods and detract little from the characteristics of this section. Because they could cause excessive concentrations of use resulting in site deterioration, both of these bridges will be removed and the approaches restored. Access will be by trail from the corridor boundary. In both cases, there will be little effect on the local transportation system by removing the bridges.

Except for 26 acres of private ownership at the very beginning of this section, all lands within the boundary of this section are National Forest. Private tracts within this section are undeveloped and probably can be purchased at fair market value. All lands within this section are proposed for fee acquisition by the Forest Service. There are no important private uses or developments to be foregone if these lands are acquired by the Forest Service.

Ellicott's Rock Scenic Area was established around Ellicott's Rock in 1966 by the Regional Forester under Regulation U-3 of the Secretary of Agriculture. This 3,584 acre area was "set apart and reserved for public recreation and closed to all other occupancy and use." Seven hundred and thirteen acres of the proposed river boundary fall within Ellicott's Rock Scenic Area. Management objectives for both areas are similar and no changes are needed in existing or proposed administration and management to make these two areas compatible.

Utilization of the timber on both private and National Forest lands is the only present use in this section which would be appreciably affected by Wild River status.

Burrells Ford Campground, a partially completed Forest Service camping area, is located below Burrells Ford Bridge. This campground will be reduced to a development scale 1 (foot access) camping area compatible with Wild River classification.

The present access road into this area will be restored to natural condition. Parking areas at Burrells Ford will be located outside the proposed corridor. This camping area is a new, partially completed area and restriction of use to walk-in campers will not change long-established use patterns.

There are approximately five miles of old jeep roads which should be closed in this section. Most are grown over and disappearing; some can be travelled and show evidence of continued use. They are used only by hunters, fishermen and infrequently by the Wildlife Officers to stock the river with catchable size trout. Closing these roads will have minor effects on existing uses within this section.

Section III - Chattooga River mile 32.5 to 26.4

Section III of the river is entirely different from all other sections. This 6.1 mile stretch is developed with fields, houses and a paralleling highway along a major portion of its length. It meets Recreation River criteria.

Most of the land along this section was acquired from Georgia Power Company. About half of these Georgia Power lands are old fields or meadows growing up in planted pines. These fields and pastures provide a pleasant pastoral variety to this section of the river and are compatible with Recreation River status.

A number of unattractive buildings are along this portion of the river. Most of these detract from the overall pastoral quality and should be removed. There are a total of 42 buildings and two house trailers in this section. Two of the buildings are in Georgia and the trailers and other buildings are in South Carolina. Nineteen cabins and one trailer are located on 13 acres divided into 19 individual lots in South Carolina. The remaining are abandoned structures on lands recently acquired by the Forest Service.

On the Georgia side of the river along the three mile stretch at Highway 28 there are no visible buildings.

Highway 28 is one of the two major paved highways crossing the river. This highway crosses at Russell Bridge in a stretch of large old fields and pastures, and then parallels within 100 - 150 feet of the river for 1.8 miles on the South Carolina side. The river flows very slowly and smoothly through this section with no sound of cascading whitewater, and the sound of traffic from the highway creates a sound intrusion. This paralleling highway is compatible with Recreation River classification. Once the buildings are removed between the highway and river, these lands should be allowed to revert to a natural state. Natural vegetative screening between the highway and river will help improve the quality of this section and act as a sound barrier.

Two miles below Highway 28 Bridge, a dirt access road drops down to a wooden low-water bridge. This access point, heavily used by experienced canoeists and floaters to bypass the slow flowing easy stretch of water above the bridge, is needed. It will help disperse the large numbers of canoeists who might otherwise start at Highway 28 Bridge. It also serves as a termination point for novice canoeists who want only a short ride over easy water. The dirt access road and low-water bridge are compatible with Recreation River classification and should be reinforced as necessary to withstand use by floaters. If parking facilities are provided here, they should be located out of sight of the river.

About 3 1/2 miles of jeep roads are located in this section. These should be stabilized and brought up to a useable standard for access. They can provide access for fishermen, canoeists, Wildlife Officers and administrative personnel and help take pressure off the more fragile Wild River sections above and below this section.

Section IV - Chattooga River mile 26.4 to 10.5

Section IV of the river meets Wild River criteria. Three tracts of private land are within this section; the rest is National Forest land. Private lands within this section are undeveloped and probably can be purchased from willing private landowners at fair market value. All lands within this section are proposed for fee acquisition by the Forest Service. No measurable private uses or developments will be foregone if these lands are acquired by the Forest Service.

The traces of two old roads should be obliterated from this section to further improve its quality. The lands around these roads should be acquired by the Forest Service so they can be restored. The first of these is Earls Ford, the

site of an early road and natural ford across the river at river mile 22.3. Evidence of this road should be obliterated to the boundary on both sides of the river, and a trail built to the river. Access by trail is definitely needed here for canoeists. This is a termination point for less experienced canoeists and a popular beginning point for expert canoeists.

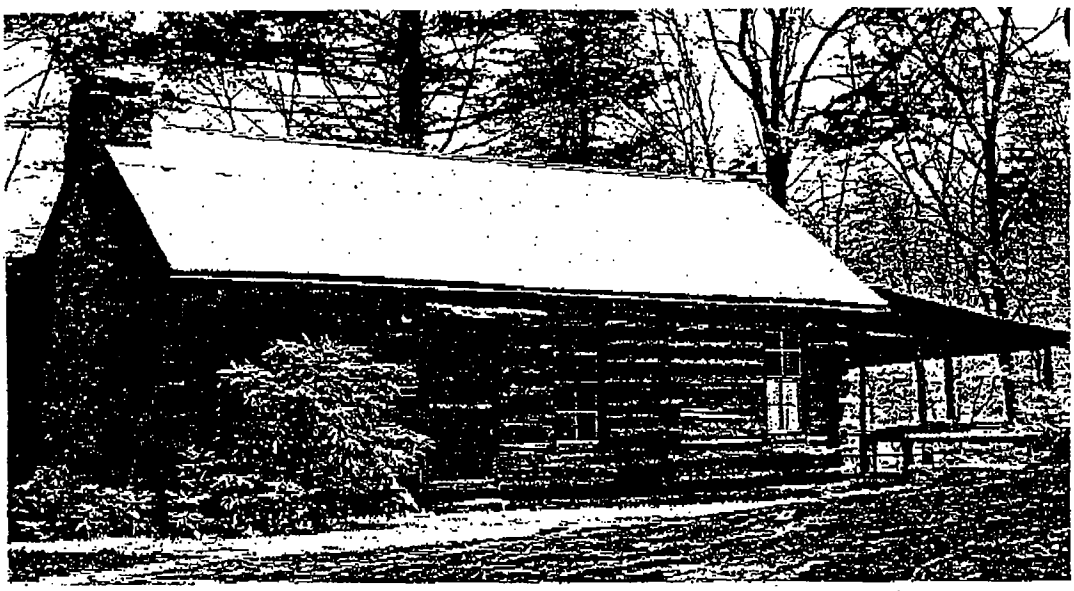
Sandy Ford is also the site of an early road and natural ford across the river. This old road should also be obliterated back to the proposed boundary and a trail constructed to the river on both sides. The stretch of the river above this point to Earls Ford is moderately difficult for canoeists, and an exit trail is needed here for those canoeists who may be "canoeless" by the time they reach this point.

Many of the sandbars and lands directly along the river through this section show evidence of primitive camping, including past campfires, littering and some general deterioration. A system of reinforced campspots located on the more inaccessible portions of the river is needed to provide for over-night camping, prevent sanitation problems and "wearing out" of the lands directly on the river.

Section V Chattooga River Mile 10.5 to 9.5

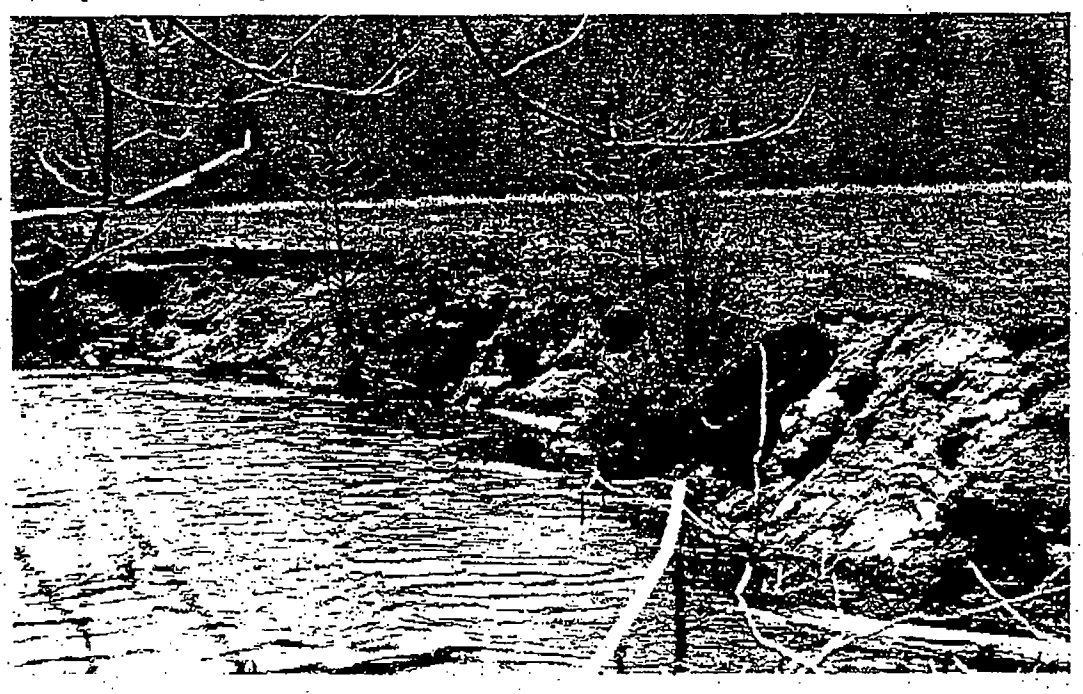
Several detracting influences need to be removed from around U. S. 76 Bridge to improve the quality of this section. These include the remains of an old steel bridge, evidence of sandmining, and a short dirt road which drops from the highway down to the river's edge and parallels the river for one-fourth mile. Heavy equipment will be required to remove this bridge. All traces of sandmining, the only mineral activity occurring within the proposed river boundary, will disappear with the first high water. Limited sand removal was done when Georgia Power Company owned this land. Since there is sand of comparable quality in the general area there will be no measurable effect on the local economy by discontinuing this activity on the Chattooga.

U. S. 76 is a paved two-lane highway crossing the river. This highway does not parallel the river but crosses in a wooded section. Its effects are limited to the immediate area. Traffic on U. S. 76 is mainly local between Clayton, Georgia, and Westminster, South Carolina, averaging 700 vehicles a day.

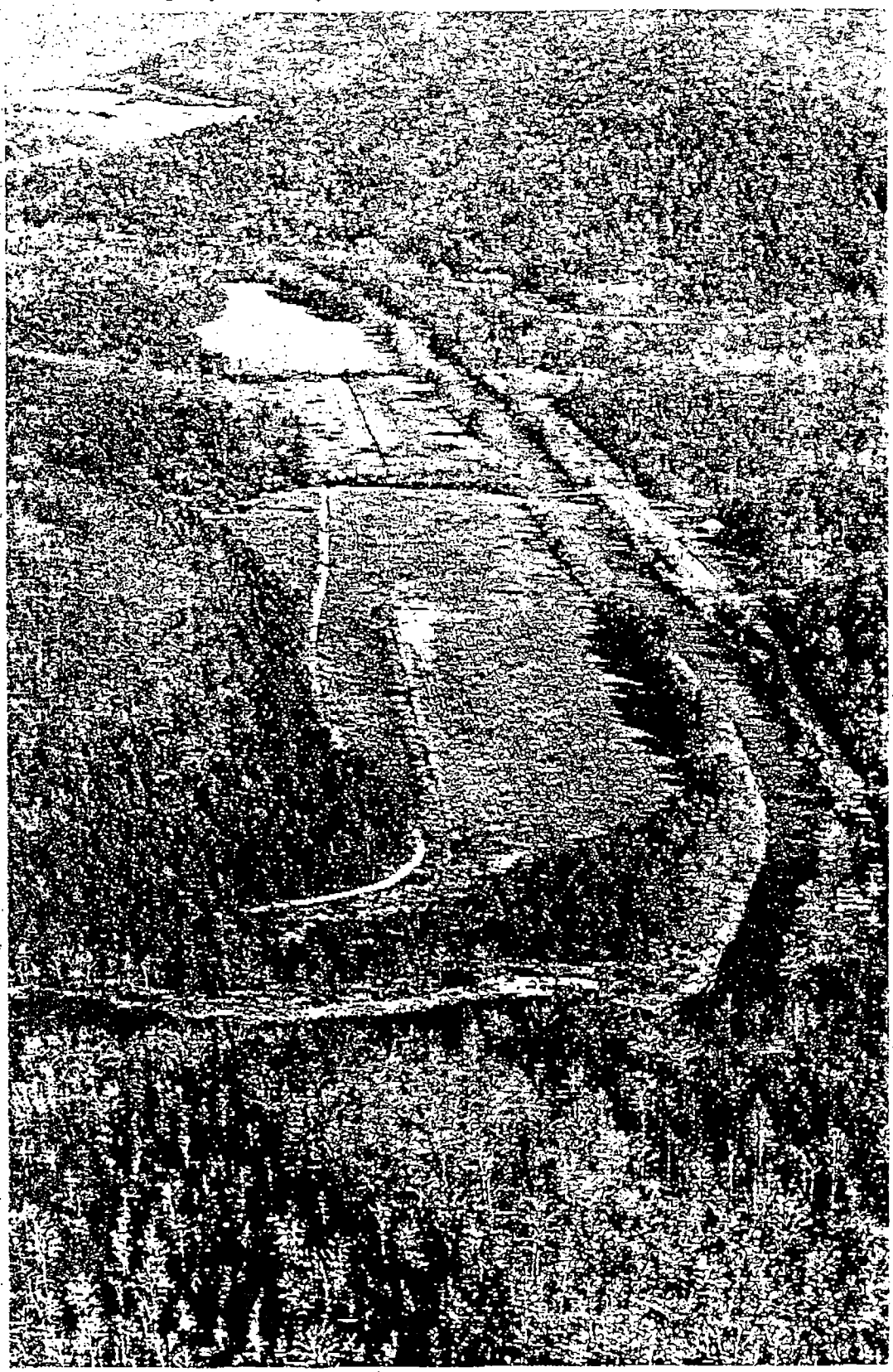


A summer home in Section I. Rustic design is compatible with scenic classification.

Eroding river banks along the West Fork.



Section III, near Highway 28, showing access roads, old fields and buildings along the river.



Section VI - Chattooga River Mile 9.5 to 4.3

An old jeep road comes down to the river's edge at Woodall Shoals. This access point is needed for canoeists. The river below Woodall Shoals is exceedingly difficult and dangerous for floaters, and most will take their craft out at this point. The old jeep road here should be removed back to the proposed boundary of the river, and a trail brought down to the river.

Section VII - West Fork river mile 7.3 to 4.0

Section VII is on the upper headwaters of the West Fork. This section includes 3.3 miles of the West Fork flowing entirely through National Forest lands. This section qualifies for Wild River classification and there are no private uses which will be affected by inclusion of this section in Wild River class.

Section VIII - West Fork river mile 4.0 to 0.0

Section VIII is located on the lower end of the West Fork and is largely developed in fields, farms, and paralleling road and highway along a major portion of its length. This section meets Recreation River criteria.

Overflow Bridge marks the upper limit of the section. It is a Forest Service concrete bridge on a dirt road crossing the West Fork at river mile 3.9. This access point is needed for canoeists who want to float this easy section and for hikers who will use it as a jump-off point into the inaccessible section above it. The road also provides important access into adjacent National Forest lands.

Below Overflow Bridge the dirt road parallels the river for 1.3 miles to paved Warwoman Highway. In most places the dirt road is within 1000 feet of the river and often visible above the river. Growth of natural vegetation along the road will eventually screen it from view. In one instance a culvert under the road protrudes almost into the river. This culvert should be screened so that it is not visible from the river.

At Warwoman Road the West Fork enters an area of paralleling fields, pastures and occasional stretches of forest. These add variety to the river and provide greater visual interest. At the start of the fields at Warwoman Road, the river banks are badly eroded and continue to show heavy erosion down to the West Forks junction with the main river. This erosion is probably due to overgrazing and lack of sufficient cover along these roads. These lands should be acquired and measures taken to stop the erosion. The owners will probably be willing to sell for fair market value. The fields and pastures along this section of the river should be maintained as open land by fertilizing and planting to hay. Permits could be issued to keep the fields cut and fertilized. This will stabilize these lands with a good cover and stop erosion.

One old farmhouse is within the boundary along this section and detracts from the overall well-maintained pastoral qualities of this part of the river.

Warwoman Highway crosses the West Fork and joins Highway 28 which parallels within one-fourth mile of the main river. This is a two-lane paved highway providing good access between Clayton, Georgia, and Walhalla, South Carolina. It now receives an average daily traffic of 300 vehicles per day.

This section is potentially one of the worst problem areas on the whole river. Paralleling Overflow Road, Warwoman Road and Highway 28 along its entire length could attract undesirable and incompatible development. All lands along this section of the river should be acquired by the Forest Service to protect its quality and to protect the view along the river and along this major access corridor to the river. This section is in forest, fields, or pasture which can be acquired for a reasonable market value with no appreciable adverse effects on present uses or landowners. Now is the time to acquire these lands while they are still largely undeveloped.

Some old junk mining equipment and old steel tanks have been abandoned on the lower portion of this section. These should be removed to improve the quality of this section.

The remains of an old splash dam are located on this section. This structure has some historical significance, is compatible with Recreation River classification, and should be left.

Georgia Power Lands

Approximately 5,700 acres of land were acquired from the Georgia Power Company during the past three years. Except for a small stretch of old fields planted in pines near Highway 28 on the main river, and items already discussed, these lands are in a completely forested condition.

The main interest of Georgia Power Company in owning lands along the Chattooga River was for potential reservoir sites. Although reservoirs were not planned for the Chattooga in the foreseeable future, there are several potential reservoir sites which would inundate practically the entire river in Georgia and South Carolina if constructed. Construction of a reservoir on any section of the Chattooga would immediately destroy that section's free-flowing, undisturbed characteristics.

The Georgia Power Company cooperated fully in this study and in exchanging land along the proposed river corridor. If this river is included within the National Wild and Scenic Rivers System, much of the credit for its outstanding primitive qualities can go to the Georgia Power Company for its sound management and protection of these extensive lands along the river in the past.

Georgia Power made some secondary uses of the lands within the river boundary. Timber stands along the river were harvested regularly on a selective basis. Inclusion of these lands and management of these timber stands for aesthetic and recreation purposes will cause no appreciable loss of timber to the local economy. Georgia Power lands acquired by the Forest Service outside the river boundary will continue to be managed for commercial timber production as well as other multiple uses.

Much of the land acquired from Georgia Power Company had detracting uses, such as worn out primitive camps, jeep trails, etc. which should be removed to improve the quality of the river. Several of these areas will be used for recreation purposes: for trails, location of information facilities, and for parking and access control along the river.

Fire Control

Most recreation use on the river occurs during the period of May through September when the forest fire hazard is low. The frequent summer rainfall and lush green vegetation combine to minimize fire danger during this period. The highest risk of forest fires occurs in early spring and fall when vegetation has dried. Fire occurrence in the corridor is small.

Some changes in fire control organization and tactics may be needed. For example, more use of airplane patrols along the narrow corridor would aid early detection of forest fires. Use of heavy equipment may need modifying to protect aesthetic values.

C. The Benchmark System

A benchmark system must be established within the proposed corridor to measure and note change in the river's outstanding qualities.

Some change is inevitable. The Chattooga River and its surrounding lands are a dynamic moving, living, changing environment. The Chattooga is not a static resource that can be fenced, "encased in glass" and preserved exactly as it is now for all future generations. Inclusion of this river in the National Wild and Scenic Rivers System can prevent over development of the river, but it cannot halt the ageless geologic and ecological processes that have resulted in the formation of this beautiful river and surrounding forest environment.

Least noticeable are the geologic processes occurring over thousands of years that have resulted in the formation and weathering down of this part of the Appalachian Mountains. These geologic processes will continue in future years, slowly changing even the eternal rock of the mountains surrounding the river. More noticeable are the erosive changes wrought by the waters of the Chattooga as it continues to cut its steep way down through the Blue Ridge escarpment.

The forest vegetation that covers the steep hillsides is a living, growing, dying, ever-changing resource. The abundance of tree and shrub species and variety of composition are the result of ageless vegetative changes as well as man's recent treatment of the environment. The towering white pine, hemlock, and many other tree species within the river boundary are successional species introduced naturally after the "cut-out-and-get-out" logging era of the late 1800's and early 1900's. These species will die out and disappear through natural succession as these forests evolve toward a climax oak-hickory and beech-birch-maple forest. Some of these successional changes may be undesirable, and future management programs may be needed to retain desirable vegetative species that now exist within the river boundary.

Vegetation within the river boundary is susceptible to forest fire, disease, insect attack, soil compaction, overuse, and abuse by man. The fish and wildlife within the river boundary move about and change constantly in numbers with changes in their environment. The waters of the Chattooga change with rainfall or drought, immediately responsive to changes in the watershed, both inside and outside the river boundary. The waters flowing

within the river boundary reflect the condition of the entire watershed.

To protect and perpetuate the unique qualities of the Chattooga River a benchmark system is needed to inventory the river's resources and evaluate their condition and trend. A benchmark system notes and measures change, and undesirable change is separated from inevitable change so that management programs can be structured to perpetuate the qualities that make this river outstanding.

The complete mechanics of a benchmark system must be worked out after the Chattooga is included in the National Wild and Scenic Rivers System. Such a system must be designed to focus on the outstanding values and more sensitive elements of the river and environment, measure the existing situation, and provide for periodic remeasurement to keep track of resource condition and trend.

Some of the outstanding river qualities that such a system will measure and monitor are--

--the river is free-flowing, and its environment is essentially primitive and undeveloped. National status and a protective boundary can essentially assure that these desirable conditions will continue within the boundary. A benchmark system should note improvement in the primitive qualities of the river as the few undesirable influences are eliminated and also note changes resulting from construction of trails, primitive campspots and other facilities.

--the river is unpolluted. This condition is definitely not assured; already a pollution problem is being cleared up on a tributary of the river. Water quality monitoring must be continued on the river and its tributaries to frequently measure all changes in this very critical factor.

--the lands along the river are in an essentially forested, natural state. This condition is readily apparent and measureable.

--forests along the river include a variety of tree, shrub, and lesser plant species of all sizes, shapes, and age classes, creating an aesthetically pleasing, natural forested scene. They include both rare and common plants. Present vegetation composition and condition must be inventoried and evaluated. Some methods that might be used are infrared aerial photography to measure species composition in the overstory canopy, line transects on a plot or strip basis to measure all species in the understory and size and rates of growth, and camera points to record the nature of the general scenery. The location and abundance of rare plant species should be totally measured and recorded. The factors responsible for the existence of the present size, shape and

composition of vegetation must be studied and clearly understood. Trends toward a climax-forest type of vegetation through ecological succession must be identified and the most desirable ecological condition determined, so management programs can be tailored to continue desirable successional plant species or allow natural evolution of climax-type forest vegetation.

Vegetation composition and condition must also be inventoried periodically to measure the effects of human use on the river environment. Is the vegetation healthy, normal, or showing signs of stress and loss of vigor? Check plots are needed in remote spots throughout the river boundary as well as in spots susceptible to heavy visitor impact, so natural changes can be separated from man-caused changes and management programs implemented to protect, improve and restore man-damaged ecological conditions. A system for measuring effects of human use on the river environment must be closely tied to an accurate system of use measurement, so damaging levels of use can be identified and optimum levels of use determined.

--the river offers exceptional values of solitude, adventure and awareness, serenity and challenge. Administratively controlled saturation levels, based on limiting numbers of people to maintain a primitive level of experience, will probably be the most severe limiting factors affecting use of this river. A benchmark system should measure these experience level values throughout the river boundary. Analysis of these findings can show the need for design changes in trails or other facilities to disperse visitors and eliminate concentrations, and can suggest needed changes in optimum use levels to maintain a primitive experience within the river boundary. Initial optimum levels have been determined for the river; the effects of these arbitrary controls must be tested and measured on the ground throughout the river boundary.

--a benchmark system must also measure and record changes in fish, wildlife, and other living creatures within the river boundary. It should measure changes in the profile of the Chattooga as it continues to cut its steep course to Tugaloo Reservoir. In effect, it should give an accurate record of all ecological and geologic changes occurring within the river boundary, both natural and man-caused.

All technical assistance available will be used in establishing the system. State and Federal Water Agencies can help with water bench-marks. Forest Service Experiment Stations and many others can help with ecological benchmarks.

D. Development - Facilities and Access

The main attraction of the Chattooga River is its recreation opportunity--the chance to visit a whitewater river and experience solitude, adventure, and challenge. Protecting and maintaining the aesthetic values of the river must remain of paramount importance. Development within the boundary of the Chattooga River must not detract from, or destroy, the natural beauty that makes this river different from other rivers.

Requirements for protection and maintenance of the unique qualities of the Chattooga are the most critically important influences affecting development within the river boundary and surrounding lands. Recreation facilities should provide for optimum public use consistent with maintaining the rare qualities of the river. Outside the corridor, areas must be carefully planned and located to minimize or prevent crowding and overuse of the Chattooga. Trails will be an important means of enabling people to see and enjoy this river. They must be carefully located and designed to disperse visitors to the river and minimize crowding and overuse effects on the environment. Trail systems should also include portages for canoeists and floaters around dangerous obstacles on the river.

Existing roads across the Chattooga should provide sufficient vehicular access to the river. Five roads now cross the Chattooga and two roads cross the West Fork. Parking areas should be located outside the river boundary to help protect the Wild and Scenic sections, while providing a place to leave vehicles.

Small information stations at each major access point can give detailed canoeability and hiking information for the sections of river above and below each road point. Current information on weather and fire prevention can be given visitors along with information needed to enjoy the river.

Reinforced campspots accessible only by trail or river can be located at strategic points. These would include drinking water and vault toilets for visitor comfort and help prevent sanitation and littering problems that come with uncontrolled camping use.

As a nationally significant attraction, the Chattooga will create a demand for large, developed camping areas to accommodate the large numbers of people who come to see this river. These must be located outside the river boundary and far enough from the river to prevent concentrations of people and overuse. Unit or recreation composite plans for the National Forest lands around the river boundary will be primarily concerned with distributing, regulating or limiting recreation uses to prevent loss or depreciation of resources.

The proposed Recreation River sections are needed to help protect and provide a continuity to the overall Chattooga River system. Recreation developments should be located in these sections only if they can complement or reduce pressure on the more primitive sections of the river.

The need for a main information center on the Chattooga should be fully explored. Such a center could provide needed detailed information about the entire river and interpretive information for those who cannot be accommodated on the river. It could also serve as a main control point if portions of the river become saturated and visitor limitations have to be imposed.

Present recreation development along the river itself is quite limited. The only public recreation development within the proposed boundary is the U. S. Forest Service campground at Burrells Ford. Private recreation residences occur in a few places. Within 18 miles of the river, there are recreation facilities such as picnicking, camping, and cabins to accommodate in excess of 1500 persons at one time. Appendix H gives the breakdown of the location and facilities available at these areas.

No additional general area access is needed for the Chattooga River. The only additional motor access planned is an extension of the Blue Ridge National Parkway which will pass within a few miles of the head of the river in North Carolina, outside the corridor.

In general, specific access already exceeds need. Only two additional roads totaling 1.4 miles are needed to make presently inaccessible areas available to the public. Neither of these roads will be constructed within the proposed boundary of the river. Generally, the plan provides for closure and revegetation of existing little-used jeep roads. A total of thirty miles of jeep roads will need to be closed and revegetated. The general plan of accessibility for the river will be by trail. Six new trails totalling 2 1/2 miles, generally on the location of old jeep trails, will be constructed from planned parking lots outside the river boundary to the river itself.

Recreation development along the Chattooga River will be kept simple. Access will be primarily by trail, except at existing highway and Forest Service road crossings. Fourteen parking lots are proposed--13 of these will be outside the proposed boundary and only the one at Overflow Bridge will be inside. To protect the river banks and the recreation users, 14 portages have been proposed around areas where canoeing is difficult or impossible.

Eleven launching sites planned for floating equipment will be kept simple and in general will have little development. Their location is along sandbars which will maintain themselves with the periodic high waters.

Ten primitive campsites are proposed along the river. These campsites will be at development scale 1, consisting primarily of reinforced areas to protect the river environment from undue wear. The sites will have minimum sanitary facilities and potable water where possible. A summary of the Recreation Development Plan will be found in Appendix I.

A system of hiking trails is necessary for full enjoyment of the river, especially in Wild and Scenic sections. A total of 54 miles of trails is proposed for the Chattooga River. These trails will, for the most part, replace existing jeep roads and poorly located foot trails. The summary of the trails and the first five years planned construction is in Appendix J.

Outside the proposed corridor, but within 12 miles of the river, additional campgrounds are proposed to handle 2400 people at one time. The only camping to be encouraged within the corridor will be overnight camping necessary while hiking or canoeing. Indiscriminate camping along the river will be discouraged. A summary of the supporting campgrounds near the river is in Appendix K.

Appendix G gives the summary of the recreation development schedule for the first five years, including expected cost.

E. Information and Education

The Chattooga River area is rich in settler and Indian history and outstanding scenic features. A real opportunity exists to interpret these outstanding features--to orient the visitor to the river's attractions, inform him of the recreation opportunities available within the river boundary, and enhance his overall experience in visiting the river.

Interpretation can do more than answer basic questions of what visitors come to see and do. It can open new vistas of knowledge and instill in the visitor a sense of appreciation for values or concepts of which he is unaware, or in which he had little or no previous interest. However, this can be done only after the basic questions are answered, and only then by relating these new concepts to what the visitor originally came to see.

Many visitors will have to canoe, hike and camp to get this association. Others will be satisfied by just driving across the river at the access points or by viewing exhibits and interpretive displays at various information points. Motion pictures and television programs can be an effective means of reaching this segment of the public.

A well planned interpretive program is needed for those who cannot be accommodated on the river. It should incite an inspiring feeling of stepping back in history two or three hundred years--a part of the same feeling that one would get if he canoed or hiked down the river. The program would provide an experience for those who for any reason are unable to participate first hand.

Purposes of an interpretive program for the Chattooga River could be--

--to stress to all visitors the need for personal safety and the proper care of the river's unique environment.

--to inspire visitors with the unique primitive qualities of the river.

--to give the public a general idea of the purpose of a Wild and Scenic River and how it is managed and protected.

--to inform the public of the recreational opportunities available on the river.

--to point out the unusually scenic features along the river.

--to explain the geology and ecology of the area.

--to tell the story of the human history along with the legends.

Basic information needs include--

--a detailed description of the various sections of the river and the recreation attractions and opportunities to be found in each.

--maps of access roads and trail system within the river boundary, showing primitive campspots, relative difficulty of trails, estimated travel time and features along the way.

--maps showing rapids, cascades, falls and portages with canoe class ratings for each reach of the river. These should also show primitive campspots, estimated travel time and features along the way.

--current river height information related to canoeability of the river.

--regulations and responsibilities of both the administering Agency and the public concerning the Wild and Scenic River.

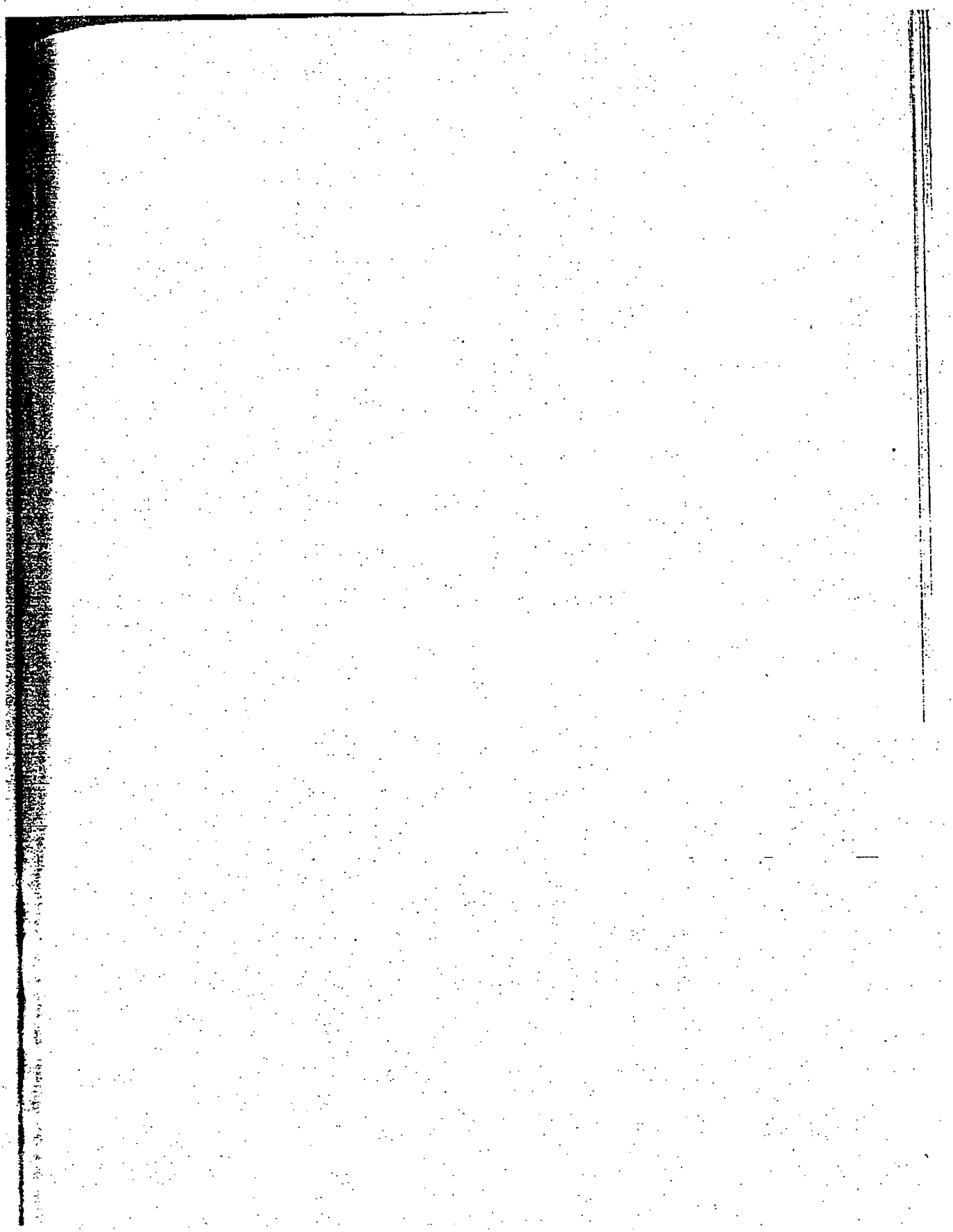
--safety considerations for all visitors to the river.

--all access roads and major trails beginning points to the river identified on the ground.

APPENDIXES

Note: Other Appendix Material on file in the office of:

Forest Supervisor
Chattahoochee-Oconee National Forests
P. O. Box 1437
Gainesville, Georgia 30501



Chattooga have been summarized by the Resources Advisory Board Southeastern River Basins staff in a memorandum dated November 14, 1969.

The method of development outlined in the report would provide four dams (Camp Creek, Rogues Ford, Sand Bottom and Warwoman), utilizing approximately 750 feet of river head, and flooding a total of about 3,700 acres.

The total capability proposed is 366,000 kilowatts. In the opinion of Georgia Power Company, the development of these projects is presently marginal from the economic viewpoint. That this is the present case is emphasized because of several factors. Hydro-electric projects now under construction and those for which Federal Power Commission licenses are pending will bring on line substantial peaking capability during the 1970's. Other proposed Federal projects, authorized by Congress but as yet not scheduled or funded, might be accorded higher priority than Chattooga development. A feasibility analysis of the Chattooga projects in the context of costs which might prevail and the energy requirements of the area at some future indeterminate date would be highly conjectural.

The staff memorandum of November 14, 1969 suggests that an alternative to the previously studied projects on the Chattooga might be a plan for more comprehensive development embracing pumped storage as well as conventional hydro-electric installations and the siting of fuel-steam plants. Georgia Power Company has not made such a study and can offer no comment on this point at this time.

Georgia Power Company concurs in the suggestions of the staff memorandum that consideration of the several possible uses of the Chattooga resources be placed on a coincident time basis and that the matter be considered from the viewpoint of the overall most beneficial development of the Savannah River Basin.

APPENDIX B

DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 889
SAVANNAH, GEORGIA 31402

17 March 1970

REFER TO

Statement of Colonel John S. Egbert
District Engineer, US Army Engineer District
Savannah, Georgia

This statement relates to the proposal to include the entire Chattooga River in the National Wild & Scenic Rivers System.

The Chattooga River is a tributary in the Savannah River Basin System. The comprehensive water resources plan of development prepared by the Corps of Engineers and approved by Congress in the Flood Control Act of December, 1944 identified four sites on the Chattooga River for eventual construction as a part of the development of the Savannah Basin. These four sites are located at Camp Creek, mile 4.9, Rogues Ford, mile 11.0, Sand Bottom, mile 17.7 and Warwoman, mile 20.4. All would provide hydroelectric power and recreational benefits.

The Savannah District is presently engaged in a comprehensive review of the water resources of the Savannah River Basin to update the 1944 approved plan as required, to reflect present water resources needs and priorities. In connection with this study, and of specific relevance to the present proposal, we are placing greater emphasis on a more comprehensive planning approach including technological, sociological and environmental studies.

Our studies to date indicate that the environmental implications of this proposal are positive, since the Chattooga in its present state contributes a great deal to the scenic and aesthetic value of the region, generally posesses high water quality and would preserve under the conditions of the proposal one of the longest and free flowing rivers in the Southeast in its relative primitive and undeveloped state, and thus preserve a unique national environmental resource. Therefore, I support the proposal to preserve the Chattooga River as a "wild and scenic river." Management and development as set forth in the proposal would contribute to the overall water resources development and preserve the positive environmental impact of the Chattooga River on the entire Savannah Basin.

JOHN S. EGBERT
Colonel, Corps of Engineers
District Engineer

APPENDIX C

November 14, 1969

PROPOSED CHATTOOGA RESERVOIR PROJECTS
AND ELECTRIC POWER POTENTIAL

Prepared by Resources Advisory Board,
Southeast River Basins Staff

Background—Pursuant to Public Law 85-850, the U. S. Study Commission, Southeast River Basins prepared and submitted to the President and the Congress in September 1963 a Report On A Plan For Development Of The Land and Water Resources Of The Southeast River Basins, Senate Document No. 51, 88th Congress. The Study Commission was deactivated in December 1963.

Possibilities of hydroelectric power within the eight river basins in the Southeast River Basins area (map attached) was one of the functions considered in preparing the Study Commission comprehensive plan of development. The Chattooga River, a tributary of the Savannah Basin was included in the geographical area for which the plan was developed.

Role of the Resources Advisory Board—Pursuant to a proposal contained in the Study Commission Main Report (pp. 4-68, 69) the Resources Advisory Board, Southeast River Basins was established in 1964—"to encourage continued coordination among the Federal and State Governments in the field of land and water resources; to review programs and projects needed in the near and distant future; and to encourage the proper development of programs and facilities to obtain the desired results,"—within the Southeast River Basins area.

At a meeting of representatives of the Georgia Power Company, U. S. Forest Service, Bureau of Outdoor Recreation, Corps of Engineers, Federal Power Commission, and the Resources Advisory Board on October 24, 1969, in Atlanta, it was agreed that the Resources Advisory Board staff would prepare a resume of the U.S. Study Commission, Southeast River Basins proposal for the Chattooga Project. Copies of the resume would be distributed by the Board no later than November 18, 1969, to the private power company and Federal agencies identified above for their comment.

The resume has been prepared by the Resources Advisory Board staff substantially in consonance with the Study Commission plan for the Chattooga Project; also pursuant with a letter dated October 7, 1969, from Mr. Roy K. Wood, Regional Director, Bureau of Outdoor Recreation, and an outline entitled, "Chattooga Hydro-Electric Potential," distributed by the Bureau of Outdoor Recreation to the representatives at the indicated meeting on October 24; and in accordance with a letter dated October 28, 1969, from H. Van Dyke, Assistant Regional Director, Bureau of Outdoor Recreation, to Horace Morgan.

The resume follows:

Proposed Chattooga River Reservoir Projects

The Study Commission proposes construction of four dam and reservoir projects—Warwoman, Sand Bottom, Rogues Ford, and Camp Creek—on the

attooga River to help meet electric power needs and as a part of develop-
ent of the basin. The power generated would be for meeting peak loads.
peration of the four potential projects would involve integration and
oordination of the water supply, power, and related purposes since all
nits involve releasing of water from one reservoir down to another.
ccordingly, they have been analyzed as one project, (maps attached).

FEASIBLE HYDROELECTRIC POWERPLANTS--CHATTOOGA PROJECT

	Reservoir				Drainage area (sq. mi.)	Gross power head (ft.)
	Normal pool elevation* (ft.)	Area (acre)	Draw-down (ft.)	Capacity (acre-ft.)		
arwoman	1,640	3,110	35	147,500	163	182
and Bottom	1,458	115	1	5,040	178	141
ogues Ford	1,317	253	25	11,300	193	246
amp Creek	1,071	260	20	15,000	258	180
		3,738**		178,840		749

*Operating elevation, feet, mean sea level
**Area flooded

Location--The proposed four units in the Chattooga Projects would be located on the lower Chattooga River in Oconee County, South Carolina, and Rabun County, Georgia.

Figure 4.26 diagrammatically indicates the location of the Chattooga Development.

The uppermost unit--Warwoman would be constructed first to provide streamflow regulation for the downstream power sites at Sand Bottom, Rogues Ford, and Camp Creek.

Sand Bottom unit would be located below Warwoman site. The powerplant would be located about a mile below the dam at the headwaters of the Rogues Ford reservoir site. Water from Sand Bottom reservoir would be diverted through a 1,600 foot long pressure tunnel which would cut through a bend in the Chattooga River.

Rogues Ford unit would be located 6.4 miles below the Sand Bottom unit, just north of U. S. Highway No. 76. By increasing the height of Camp Creek reservoir from an operating level of 1,021 feet to 1,071 feet, a loss of 50' in power head in Rogues Ford would occur, but it would be gained downstream in Camp Creek site. This would induce a total saving in construction costs, thereby improving the entire system.

Camp Creek unit would be 6.2 miles below the Rogues Ford site and about 5 miles northeast of Tallulah Falls, Georgia.

The Camp Creek powerplant would discharge into existing Tugaloo Reservoir at elevation 892 feet, while providing a gross power head of 180 feet. Part of this gross head would be obtained by utilizing a tunnel and penstock to gain the head in the river between Camp Creek and Tugaloo Reservoir. Thus, this plant would complete the continuous chain of four integrated units from Warwoman downward to Sand Bottom, Rogues Ford, Camp Creek; then into the existing Tugaloo and Yonah developments of the Georgia Power Company; and thence into Hartwell Reservoir.

PRINCIPLE BENEFITS OF EACH PROPOSED UNIT IN THE CHATTOOGA PROJECT

Hydroelectric Power Potentials

Unit	Installed capacity (kw.)	Output average annual generation (million kw.-hr.)
Warwoman	80,000	50.3
Sand Bottom	66,000	42.8
Rogues Ford	120,000	77.5
Camp Creek	100,000	75.0
	366,000	245.6

Annual equivalent primary tangible benefits for the four Chattooga power units would be $9,228,000

Recreation benefits—Recreation facilities such as access roads, boat docks, trails, camping and parking areas, water supply, sanitary facilities, and related works would be provided.

Unit	Recreation increase (user-day)*	Fish and wildlife increase (user-day)*
Warwoman	100,000	100
Sand Bottom	45,000	-660
Rogues Ford	60,000	-970
Camp Creek	55,000	3,300
	260,000	1,770

*User days annually by the year 2000.

Annual equivalent primary tangible benefits for recreation would be $9,000; for fish and wildlife minus $21,000.

Warwoman and Camp Creek Projects would provide power, recreation, and fish and wildlife usage. Sand Bottom and Rogues Ford Projects might adversely affect some types of fish and wildlife developments in the area because of the change from open stream to reservoir conditions. The reservoirs themselves, together with associated improved access, generally create fishing values greater than those of the stream reaches they replace. Facilities for access to fishermen and others would be provided. Eighteen water access areas would be located as follows: Warwoman—6, Sand Bottom—4, Rogues Ford—2, and Camp Creek—5. The water access areas would provide wide distribution of facilities, at low cost, to make the reservoirs available to visitors from all over the region. They would be located at suitable sites for sportsmen and other and where construction work and land acquisition could be held to a minimum.

A main objective of the access sites would be to provide convenient points to reach the reservoirs for fish and wildlife management, reservoir planting, sampling, and measurements, and other purposes outside the fields of recreation and fishing.

Ten recreation areas totaling 260 acres would be located as follows: Warwoman—2, Sand Bottom—2, Rogues Ford—2, and Camp Creek—4.

The total annual equivalent primary tangible benefits for power, recreation, fish and wildlife would be $9,576,000.

Other Benefits—The four units in the Chattooga Project would provide benefits of primary and secondary nature attributable primarily to recreation and hydropower. Basinwide coordinated multiple-use operation of the four potential Chattooga River units with other units in the Savannah Basin with the relatively large storage regulation would decrease drawdowns and increase stability of operations and would greatly enhance power, recreation, fish and wildlife, navigation, and other uses beyond monetary values credited in the Study Commission plan.

Construction activities would provide a temporary impetus to the local economy. A substantial part of the construction costs would be spent locally for wages, services, and materials. Following completion of the project, some construction in the immediate vicinity of the reservoir should further benefit the construction trades and local economy.

Business, present and potential, would benefit from the increased recreational activity in the area. There would be increased sales of gasoline, food, lodging, beverages, and recreational supplies and equipment.

The hydropower development and regulated water would enhance the industrial development potential of the area and also facilitate the economic growth in general.

There would be an increase in land values in the vicinity of the reservoirs as a result of increased utility of the area and the improvements. This would broaden the tax base of the counties involved and result in increased tax revenues.

Flood control benefits—Benefits accruing to flood control from development of the Chattooga Project would not be significant.

Other influences—The four proposed reservoirs would inundate more than 3,700 acres of the lower Chattooga Valley that are now valuable for timber production and other uses and would also inundate a few fishing streams of good quality. But, they would, in addition to their specific uses, improve land values around their borders. The reservoirs themselves, together with associated access, generally create fishing values greater than those of the stream reaches they replace.

The initial impact from construction of the reservoirs would accrue to North Carolina, South Carolina, and Georgia. The benefits from the regulation that the reservoir system would provide would accrue to the Nation generally, but Georgia and South Carolina would receive the greater share of the benefits and costs.

The valley now has limited development, except for small areas of agricultural land, principally in the Warwoman site and some highways and roads. This series of units would be comparable to the developments on the Tugaloo and Tallulah Rivers which have created substantial recreation and fishing uses, even though development was expressly for hydroelectric power. However, available data indicate some damages could occur to fish and wildlife and to recreation by development of the 4 Chattooga River units.

The limited data on the Chattooga Project needs review in light of what has occurred as a result of quite similar developments on the Tallulah River.

The system of four reservoirs proposed would have both physical and economic effects on each unit in the system. This does not mean that the proposed system could not be improved by more thorough study or could not be developed in stages over a number of years. Further investigation may result in desirable adjustments in the proposed plan. Such studies should be made before any major segment of the plan is constructed. For example, pump storage multiplies the amount of peaking power that can be obtained from a limited stream flow—thus, pump storage as an alternative or supplemental means of power generation should be analyzed.

Chattooga Project Costs Related to Benefits
($1,000)

Investment*

Joint Costs	45,410**
Power facilities	91,720
Recreation facilities	1,170
Total	138,300**

*Investment costs are based on January 1, 1960 prices.
**Includes $60,000 for fish and wildlife facilities to mitigate fish and wildlife losses.

nual equivalent

Investment		4,979
Operation, maintenance, and replacement		944
	Subtotal	5,923
		3,038
	Total	8,961

llocation of Costs ($1,000)

	Investment	Annual equivalent		OM & R at year 2000
		Total	OM & R	
Power	136,900	*8,829	873	874
Recreation	1,400	122	71	73
	138,300	*8,961	944	947

*Includes $3,038,000 for taxes foregone

Hydroelectric Power Costs—Chattooga Project

	Costs ($)			
	Annual equivalent			Investment
Project	Total	Operation maintenance, & replacements	Taxes foregone	
Chattooga Units	8,839,000*	873,000	3,038,000	136,900,000

*Includes $3,038,000 for taxes foregone

Recreation Costs—Chattooga Project

	Costs ($)*		
	Annual Equivalent		Investment
Project	Total	Operation maintenance, & replacements	
Chattooga Units	122,000	71,000	1,400,000

*Allocated costs only

Cost sharing—Chattooga Project

Project	Investment costs non-Federal	Annual operation, maintenance, and replacement costs at year 2000, non-Federal
Chattooga Project	$138,300,000	$947,000

Cost sharing data shown above are only suggestive. Further study may result in different costs and cost-sharing arrangements.

Investment costs—include all of the costs of project construction including lands and rights-of-way, estimated for the period of development through the year 2000.

Operation, maintenance, and replacement costs—shown as an annual cost, and estimated on the basis of development at year 2000.

Operation, maintenance, and replacements costs for use in cost-sharing arrangements are based on full use of the facilities that are specifically proposed. Since the ultimate need during the period studied will not normally develop until the year 2000, the full operation, maintenance, and replacement costs for the Chattooga facilities are shown as "OM & R at year 2000." The plan is designed to meet needs to the year 2000, so additional needs, costs, and benefits that may develop after that year have not been evaluated. This does not ignore or preclude the possibility of adding facilities after the year 2000, if the Chattooga project then exists and additional needs should be met.

Costs of Chattooga Development Related to Benefits by States
(thousands of dollars)

Project	Georgia			South Carolina		
	Benefits	Costs		Benefits	Costs	
	Annual equivalent*	Total annual equivalent	Investment	Annual equivalent*	Total annual equivalent	Investment
Chattooga**	9,576	8,961	138,300	9,576	8,961	138,300

*Primary tangible only; intangible and secondary benefits and impacts considered are presented in narrative.
**The project would be located in two States; total costs and benefits are shown in each State.

REGIONAL NEED FOR DAMS

Present and future needs for electric power—The per capita use of electricity in the SERB area in 1959 amounted to about 3,000 kilowatt-hours, which was below the average for the Southeastern region, which in turn, was below the national average.

Energy requirements in the SERB area in 1959 totaled about 15 billion kilowatt-hours with a demand of about 2.9 million kilowatts. Hydroelectric plants generated about 3 billion kilowatt-hours that year and had a peak capacity of nearly 900,000 kilowatts.

(In FY 1968, Clark Hill with 280,000 kilowatts capacity generated about 660,365,000 kilowatt-hours. Hartwell with 264,000 kilowatts capacity generated 486,000,000 kilowatt-hours in FY 1968. Since power was put on the line in 1954, Clark Hill has sold $46,810,000 of power; since operation began in 1962 Hartwell has had revenue from power sales amounting to $16,293,000.)

Within the Savannah basin, the Georgia Power Company at four electric erplants on the Tallulah River and two plants on the Tugaloo River has installed capacity of 166,420 kilowatts. The Georgia Power Company and City of Augusta in 1966 applied to FPC for a joint license to build a roelectric plant with 12,000 kw. capacity on the Augusta Canal.

Five other electric power plants in the Savannah Basin have an installed acity of 26,100 kilowatts. In March 1967, Duke Power Company began struction of the Keowee-Toxaway power complex which will ultimately ovide 10,408,000 kilowatts.

By 1975, the projected per capita use of about 7,600 kilowatt-hours year will closely approach both the projected market area and national rages.

By 1975, electrical energy requirements in the SERB area are projected 49 billion kilowatt-hours with a demand of about 9.1 million kilowatts. 2000, total electrical requirements in the SERB area are expected to ach at least 119 billion kilowatt-hours with a demand for about 22 million lowatts of capacity. Per capita use is expected to be at least 11,700 lowatt-hours annually.

Facilities are included in 27 proposed projects in the Study Commission lan for the SERB area to provide additional installed hydroelectric power apacity of 2.5 million kilowatts and provide an additional production of 6 billion kilowatt-hours.

Area served from proposed Chattooga projects—The Savannah Basin exports wer to market areas which include South Carolina, most of North Carolina, nd most of Georgia.

The large interconnected power regions of the United States are subdivided into power supply areas embracing interconnected and coordinated lectric facilities. The Southeast River Basins (SERB) are part of four ower supply areas—21 through 24, as designated by the Federal Power Commission. The SERB area is connected to generating sources in adjacent areas hrough transmission lines ranging from 34,000 to 230,000 volts. Most of he Savannah Basin is in power supply areas 21 and 23.

Development of the units in the Chattooga Project would require construction of high-voltage transmission lines from the generating sources o load centers and ties to existing transmission grids. As the electric load grows, additional transmission and distribution lines would be constructed; substations would be enlarged; and new stations built to eet the shifting load patterns. Transmission and distribution of energy rom source to user will pose no unusual problems.

The area served by the proposed Chattooga Project substantially depends pon whether public or private interests develop the project and would be contingent upon the marketing arrangement for the electric power generated.

Other potential damsites in the Savannah basin. Other potential projects including hydroelectric power as a purpose which are included in the Commission plan for development in the basin are:

Project	Normal pool elevation (ft.)	Power storage (acre-feet)	Gross head (ft.)	Installed capacity (kw.)	Average annual generation (million kilowatt-hour)
Horsepasture	2,960	11,400	1,860	58,000	89
Tallow Hill	610	560,000	190	172,000	113
Anthony Shoals	410	113,000	70	100,000	61.5
Trotter Shoals*	475	63,000	145	310,000	471.4
Lower Savannah: Burton's Landing	103	90,000	48	100,000	345
Stokes Bluff	55	110,000	35	60,000	197
		947,400	2,348	800,000	1,276.9

*Authorized, planning underway, construction not funded.

((The Secretary of the Interior in June 1966 filed a petition for intervention in Duke Power Company application to the Federal Power Company for license to build the Keowee-Toxaway Project (FPC Project No. 2503) and said in part—"The next step in the comprehensive plan for development of the Savannah Basin is the Trotters Shoals Project"—

—"Subsequently, power may be made available to applicant from the four Chattooga River plants (meaning—Warwoman, Sand Bottom, Rogues Ford, and Camp Creek), which comprise the next step in the comprehensive plan after Trotters Shoals."))

The more significant alternative unit considered but not included in the Study Commission plan was the upper Chattooga River project, a high head plant upstream from Warwoman reservoir. Data on that potential hydroelectric facility follows:

Upper Chattooga Project

Project	Normal pool elevation (ft.)	Power storage (acre-ft.)	Gross head (ft.)	Installed capacity (kw.)	Average annual generation (million kilowatt-hour)
Upper Chattooga	2,600	12,000	960	38,000	45.3

Other potential projects including hydroelectric power as a purpose ch were considered and not included in the Commission plan for the annah basin are:

Other Potential Hydroelectric Powerplants

ject	Normal pool elevation (ft.)	Power storage (acre-feet)	Gross head (ft.)	Installed capacity (kw.)	Average annual generation (million kilowatt-hour)
per Whitewater	2,800	5,000	800	12,000	19.6
wer Whitewater	2,000	5,800 10,800	900 1,700	22,000 34,000	28.2 47.8

(It is not contended that the above cited power possibilities consti- tes the total potential in the basin. Concerned power interests who erate in the Savannah basin may have under consideration other locations nd other sources of electric power.)

SERB area, Savannah basin, and Chattooga River power production—present and future—The electric load of the SERB area and in the general outheastern electric power market area, at the time the study Commission erformed its studies, had expanded beyond the ability of hydroelectric apabilities. Most of the energy requirements of the SERB area in the arly 1960's were met from fuel-electric generating sources—70 percent, r 2,043,500 kilowatts; whereas 30 percent or 867,200 kilowatts were nstalled in hydroelectric plants. Thus, in the SERB area the installed apacity on December 31, 1960, exclusive of capacity not contributing to the public supply, totaled 2,910,700 kilowatts.

The Study Commission envisioned in its plan that by the year 2000, the SERB area would have a demand of approximately 22 million kilowatts. The 2.9 million kilowatts of installed capacity from 29 projects listed in the Study Commission Report would provide only about 13 percent of the total demand.

The following table indicates the location of the 29 projects within the SERB area.

Hydroelectric Power Supply Projects Under Construction and Selected Potential Projects

Basin and project	Installed capacity (thous.kw.)	Average annual energy (thousand kilowatt-hours)
Savannah basin:		
Horsepasture	58	88,500
Jocassee	150	77,100
Newry-Old Pickens (Keowee)	150	93,800
Warwoman	80	50,300
Sand Bottom	66	42,800
Rogues Ford	120	77,500
Camp Creek	100	75,000
Hartwell	330	450,000
Trotters Shoals	310	471,400
Tallow Hill	172	113,000
Anthony Shoals	100	61,500
Burtons Landing	100	345,000
Stokes Bluff	60	197,000
Sub-total	1,796	2,142,000
Altamaha basin:		
5 projects	388	670,000
Apalachicola-Chattahoochee-Flint Basins:		
10 projects	728	1,625,900
Choctawhatchee-Perdido basins:		
1 project	47	53,000
Total	2,959	4,492,600

(Of the 29 projects listed in the preceding table, the Corps of ineers has since completed two of the projects and a third project nder construction, as follows):

in and project	Installed capacity (kilowatt)	Average annual energy (kilowatt-hour)
annah basin		
artwell	264,000	453,000,000
lachicola-ttahoochee-nt basin		
alter F. George*	130,000	494,093,000 (1968 FY)
est Point**	73,375 (initial)	191,000,000
	109,000 (ultimate installation)	191,000,000

artwell became operational in 1962, Walter F. George in 1963.
est Point under construction, scheduled for completion in 1973.

Also, Trotters Shoals has been authorized, with an anticipated installed pacity of 310,000 kilowatts.

In addition, Duke Power Company has under construction the Keowee-Toxaway electric power complex, consisting of:

acility	Kilowatts
ake Keowee-Toxaway ydroelectric (ewry-Old Pickens)	140,000
ocassee mp storage (reversible pump turbines)	305,000
conee clear (3 units)	2,658,900
Total	3,103,900

Eventually, Duke Power Company plans to install 7 million kilowatts of generating capacity in steam stations on the shores of Lake Keowee. to 3,000 mw. of steam electric power is in the immediate offing at hat location. Two additional reversible pump turbines which will generate 05,000 kw. will be added to Jocassee at a later date.

The following table indicates the location of the 29 projects within the SERB area.

Hydroelectric Power Supply Projects Under Construction and Selected Potential Projects

Basin and project	Installed capacity (thous.kw.)	Average annual energy (thousand kilowatt-hours)
Savannah basin:		
Horsepasture	58	88,500
Jocassee	150	77,100
Newry-Old Pickens (Keowee)	150	93,800
Warwoman	80	50,300
Sand Bottom	66	42,800
Rogues Ford	120	77,500
Camp Creek	100	75,000
Hartwell	330	450,000
Trotters Shoals	310	471,400
Tallow Hill	172	113,000
Anthony Shoals	100	61,500
Burtons Landing	100	345,000
Stokes Bluff	60	197,000
Sub-total	1,796	2,142,000
Altamaha basin:		
5 projects	388	670,000
Apalachicola-Chattahoochee-Flint Basins:		
10 projects	728	1,625,900
Choctawhatchee-Perdido basins:		
1 project	47	53,000
Total	2,959	4,492,600

Also, in 1966, the Congress authorized Duke Power Company to build a small coffer dam in the 1970's across the Savannah River at Middleton Shoals between Anderson County, South Carolina, and Elbert County, Georgia to provide cooling waters for a 2 million kilowatt steam plant.)

The electric energy requirements within the Savannah basin, excluding the Savannah River plant of the Atomic Energy Commission, are estimated to increase from 2.6 billion kilowatt-hours in 1959 to at least 6.5 billion kilowatt-hours by 1975 and to 16.4 billion kilowatt-hours by 2000. The demands, based on load factors of 59.6 percent for 1960, 62.4 percent for 1975, and 62.7 percent for 2000, are 504,500 kilowatts, 1,180,000 kilowatts, and 2,983,000 kilowatts, respectively.

Of the preceding indicated electric energy requirements of the basin, the 4 units in the Chattooga Project would generate an average annual output of 245.6 million kilowatt-hours, with an installed capacity of 366,000 kilowatts, if constructed according to the Study Commission plan. Thus, the hydropower potentials in the Chattooga Projects could meet only a portion of the power supply requirements.

The projected demands for electricity in the Southeast River Basins far exceed any potential which the area has for hydroelectric power development.

(The Chairman of the Federal Power Commission on November 7, 1969, in testimony before the Joint Committee on Atomic Energy said, "The projected growth of the electric utility industry during the next two decades may possibly require the construction of about 40 new hydroelectric installations of 100 megawatts or more, approximately 50 new pumped storage hydroelectric installations of 300 megawatts or more and about 90 fossil and 165 nuclear steam-electric plants on new sites. To meet these needs, the electric utility industry will need to install 1,000,000 megawatts of new capacity between 1970 and 1990."

The power official did not indicate where within the Nation the installations might be installed.)

Possibilities of potential impoundments on other rivers to satisfy power needs—

("The Nation's Water Resources," Water Resources Council, 1968, for the South-Atlantic Gulf Region, 24 distinct river systems extending from the Roanoke River Basin in Virginia to the Pearl River Basin in Mississippi, stated that—

"Federal hydroelectric projects currently under construction will provide 715,000 kw. of installed capacity, non-Federal projects about one million kw. Four other federally authorized projects on which construction has not been initiated but likely to be completed before 1980 will provide 580,000 kw. of hydropower. Non-Federal hydroelectric facilities may be developed that will provide 800,000 kw." The foregoing additional sources would total 3,095,000 kw.—if constructed. Thus, within the next

0 years in an area three times larger than the SERB area, only about 3 illion kilowatts of additional capacity would be provided from impoundments.

The South Atlantic-Gulf Region totals 276,000 square miles, the South- st River Basins area includes 88,000 square miles.

Unless a significantly larger amount of TVA electric power sources are aled into the SERB area, the only additional probabilities of potential poundments on other rivers to satisfy immediate power needs would be rovided by the sources mentioned in the Nation's Water Resources quoted bove.)

Alternative means of meeting electric power needs—

(one alternative would be to expand and improve the design for projects n the Study Commission Report as has been done by Duke Power Company at ts Keowee-Toxaway power complex.

For example, the Study Commission plan which included consideration nly of hydroelectric potentials estimated that Jocassee and Newry-Old ickens Projects would have an installed capacity of 300,000 kilowatts and n average annual generation of 170.9 million kilowatt-hours. Within the rea covered by those two projects, Duke Power Company has expanded facilities nder initial construction or to be added later to include pump storage and team stations that would provide 10,408,000 kilowatts as follows:

Facility	Initial construction (kw.)	To be added later (kw.)	Total (kw.)
Jocassee (pump storage)	305,000	305,000	610,000
Newry-Old Pickens (Keowee-Toxaway)	140,000	—	140,000
Oconee Nuclear Station (3 units)	2,658,000	—	2,658,000
Steam stations	3,000,000	4,000,000	7,000,000
			10,408,000

Much of the power produced by Duke at Keowee-Toxaway power complex will be transmitted to customers in North Carolina and would be well beyond the SERB area. Only a small portion of the 10,408,000 kilowatts expected from that power complex would be used in the SERB area under present arrangements.)

Preliminary studies by the Study Commission indicated that pump storage would be economically feasible at the Trotters Shoals site at such times as load requirements justify such additions to the project. It is estimated that about 290,000 kilowatts of pump storage capacity could be developed in connection with the Trotters Shoals Project. The Clark Hill Reservoir could act as an afterbay for pump storage units in the Trotters Shoals project.

Pump storage capacity could be installed in the four units of the Chattooga River Project and possibly at other sites.

The feasibility of pump storage depends on the availability of off-peak energy and on the physical advantages of each site. The annual load factor of electric usage is expected to increase in the future. This will tend to decrease the availability of off-peak energy that comes from steam-electric generation, which is in excess of base-load requirements.

In the Piedmont province, there are other potentials for classical pump storage units along the major streams transversing the area.

Part of the additional capacity required to meet the increasing electric load may be in nuclear-fueled plants. Advances in the use of fuel cells, thermal-electric, solar and other types of devices to convert heat to electric energy have been made. With further experimentation, development, and improvement some type of direct conversion unit may become competitive with the present steam-electric central station plant for base load operations. Nuclear-fueled plants have recently become more competitive with conventional steam-electric plants.

Developments in the application of aircraft-type jet engines as prime movers of electric generators indicate that they have a potential for peaking purposes. The initial cost per kilowatt is considerably less than conventional thermal plants, thus reducing fixed charges. The plants can be fully automated reducing operator costs offsetting to some degree the high costs of fuel. These installations have further advantages of site location, cooling water requirements, and load availability. One major disadvantage is the problem of noise suppression.

While not an alternative means of meeting electric power needs, emerging super-transmission grids of the 230/500 kilovolt range would connect major load centers with the major generating center—and thus would facilitate the interchange of power between areas. But, in addition, radial transmission lines to convert new generating sources, nuclear, conventional fuel, or hydroelectric, will be needed. However, transmission is not now and is not expected to be a major problem in meeting future electric requirements.

Direct current transmission may be in the picture by the year 2000.

USE OF THESE DATA

Substantially all of the information contained in the Chattooga River Project is based on data contained in the Report of the U. S. Study Commission, Southeast River Basins, 1963. Much of the information in that Report is based on 1960 conditions—thus is based on conditions of about 10 years ago. The Study Commission Report plus the information contained herein is intended to serve as a guide to resources development.

The Georgia Power Company, the indicated Federal agencies and other interests involved in the Chattooga River should consider providing additional inputs, if the information furnished herein is to reflect current conditions and plans of all entities.

Much of the costs, benefits and other data shown for the Chattooga Development should be construed as extraneous, unless corresponding information is concurrently submitted and considered for the Chattooga River as a Wild or Scenic River. Otherwise, it would be inconsistent to furnish elements of the power and recreation plan indicated above, but not have a comparable wild or scenic river plan—so that the two plans may be equated. Further, if other plans are prepared, identical period of analysis and evaluation procedure should be agreed to at an early date for the two plans—wild (or scenic river) and the Chattooga Development.

Some inconsistencies and inadequacies are likely to occur when selected material is taken out of the context as in this instance when the Chattooga Development has been extracted from a comprehensive plan for the Savannah Basin. It would be more appropriate to consider the Savannah Basin and the Southeast River Basins area in the aggregate rather than disaggregating the Chattooga Development.

The power, recreation and other interests should give consideration to the advisability of or need for rearranging the sequence, content, and format of this resume which has been compiled substantially pursuant to an outline proposed by the Bureau of Outdoor Recreation, Regional Office, Atlanta.